Strengthening Water Quality Monitoring

Over the past decade, EPA has worked closely with states and other partners to significantly improve the quality of environmental information and to make it easier for water quality managers as well as citizens to obtain and understand such information. The vastness of our geography, the abundance of our water resources—3.5 million miles of rivers and streams—and the number of parameters of interest make adequate monitoring coverage a major challenge.

The Water Quality Reporting Process Under Section 305(b) of the Clean Water Act

The *National Water Quality Inventory Report to Congress* (prepared under section 305(b) of the Clean Water Act) is the primary vehicle for informing Congress and the public about general water quality conditions in the United States. This document characterizes the extent to which states are meeting the water quality standards they have set for their waters under the Clean Water Act, identifies widespread pollution problems of national significance, and describes various programs implemented to restore and protect our waters.

Over the past decade, considerable progress has been made in improving the consistency, comprehensiveness, and quality of this report and the state reports on which it is based. A work group of state and EPA representatives has addressed, among other issues, problems of inconsistent state assessments and the lack of comprehensive coverage of waters. As a result of these efforts, states are now taking advantage of modern information technology to provide more current and comprehensive information. States are issuing electronic updates, thus reducing the paperwork burden; they are moving toward comprehensive assessments of all waters; and they are mapping water quality information. EPA provides technical support to states that need to create or upgrade their assessment databases and their mapping capabilities.

Consolidating Reporting Under the Clean Water Act

In addition to water quality reporting under section 305(b), states are also required, under section 303(d), to identify waters that are not attaining water quality standards. EPA is working closely with its state partners to develop a consolidated assessment approach that will streamline and improve the quality of these two reports. The benefits of the consolidated approach are improved decision-making on impaired waters and clearer communication to the public on the condition of the nation's waters. EPA is working closely with a variety of stakeholders, including state water quality agencies, farming organizations, environmental groups, and industrial facilities, to make this approach a reality.

Volunteer Monitoring

Citizen volunteers are valued partners in the nationwide effort to monitor and protect our waters. Quality-assured data collected by trained volunteers can supplement professional data, especially in areas that would otherwise be unmonitored. Volunteers can help establish baseline information, observe trends, and detect emerging pollution problems. Over the past 10 years, OWOW has worked to improve the credibility of data collected by volunteers; encourage acceptance of such data by state, local, and federal agencies; and promote the growth of volunteer monitoring in all states. OWOW's volunteer methods manuals for streams, lakes, and estuaries are widely used, as is a plain English volunteer guide to quality assurance. OWOW also supports a national newsletter for volunteer monitors, regular national and regional conferences, a list-server for the exchange of questions and information, and a national database (yosemite.epa.gov/water/volmon.nsf) of volunteer environmental monitoring programs.

Water Quality Monitoring Council

The National Water Quality Monitoring Council, formed in 1997 by EPA and the U.S. Geological Survey, serves as an interagency forum for seeking consistent and scientifically defensible federal and state water quality monitoring methods and strategies, and for defining a national agenda of needed monitoring, research, and assessment models and tools. The Council has sponsored two national conferences on water monitoring and published a series of technical studies on the state of water quality monitoring, along with recommendations for improvement. OWOW cochairs the Council, which includes 35 representatives from federal, interstate, state, tribal, local, and municipal governments; watershed groups; universities; and the private sector, including volunteer monitoring programs.

Biological Monitoring

States are adopting increasingly more comprehensive and sophisticated monitoring approaches that not only measure levels of chemical pollutants but also assess the biological condition of waters—specifically, the health of aquatic communities such as benthic macroinvertebrates, fish, and algae. These bioassessments can be used to better understand existing aquatic resources, protect aquatic life, detect underestimated or missed problems, help water resource managers set priorities, assess the effectiveness of management actions, and track long-term trends in water quality. Over the past 10 years, EPA has produced a number of tools to help states develop and implement biological monitoring techniques. These include updated bioassessment protocols for wadable streams; new methods for lakes, reservoirs, and estuaries; and a database summarizing state bioassessment programs. In 1997 OWOW helped form a new national work group with the objective of improving methods and programs to evaluate the biological integrity of wetlands. This work group, composed of scientists from six federal agencies, six states, and seven universities, will soon publish a series of modules that describe the "state of the science" of wetland biological assessment.

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